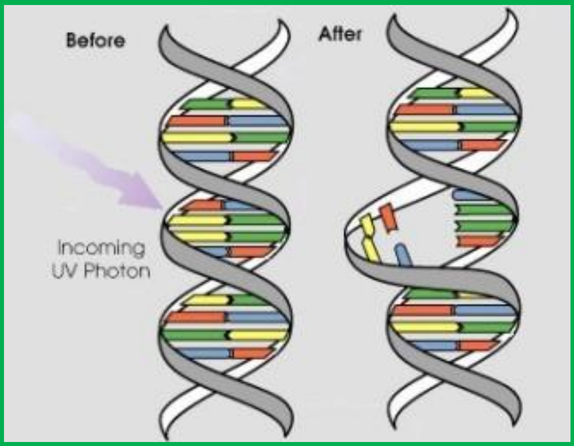
Hydro Dynamics, Inc.
Harnessing the Power of Cavitation

Advanced Cavitation Technology

Hydro Dynamics, Inc. (HDI) has developed a patented technology providing breakthrough benefits for industrial processing of fluids. HDI's product, the ShockWave Power™ Reactor (SPR) utilizes "controlled cavitation" to solve critical problems for customers in numerous industries. The SPR represents a paradigm shift for fluid processing and is truly a next generation industrial technology that allows customers to realize significant cost savings through improved efficiencies, lower capital expenditures, decreased maintenance costs and reduced environmental impact. The SPR has been installed all over the world and is used by several Fortune 500 companies. HDI, founded in 1991, is headquartered in Rome, Georgia, USA.

ShockWave Power UV Technology

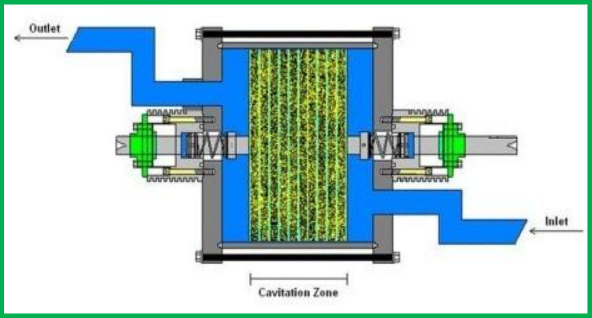


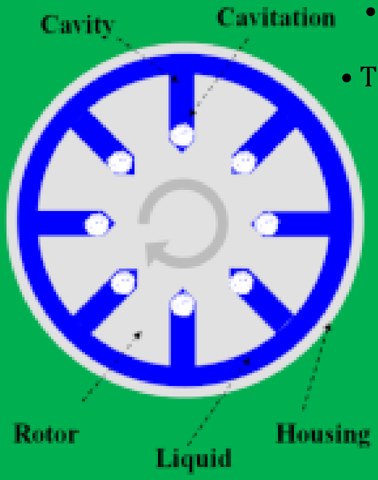
The UV-ShockWave Power Reactor (UV-SPR) is a non-immerse UV technology where the lamps do not come in contact with liquid. The reactor itself utilizes UV and cavitation for applications such as: Water Disinfection, Cold pasteurization, Decolorization, Polymerization, and many more.

Conventional UV technologies have tried to find a way to improve efficiencies of existing systems by increasing UV lamp intensity. However, high intensity lamps are not effective on opaque solutions; they are only effective on clear solutions. Conversely, the UV-SPR system utilizes a surface refreshing technique that brings bugs close to the lamp for improved exposure instead of using higher intensity bulbs to disinfect opaque solutions. Of course, our technology can also be used for clear liquids as well as opaque liquids.

Technology

As a liquid passes through the SPR it is subjected to "controlled cavitation". The heart of the device is a specially designed rotor that spins. The spinning action generates hydrodynamic cavitation in the rotor cavities away from the metal surfaces. The cavitation is controlled and therefore there is no damage. As microscopic cavitation bubbles are produced and collapse, shockwaves are given off into the liquid which can heat and/or mix.





- The heart of the technology is a specialized rotor
- The rotor has dead-ended cavities
- Spinning creates low pressure at the cavity bottoms
- The low pressure zones collapse releasing shockwaves
- Cavitation is created in the cavities, not on metal surfaces.
- The Cavitation is controlled, therefore there is no damage.

While varying by application, one or more of these significant benefits will be realized through the use of an SPR over conventional technologies:

- Process intensification and acceleration
- Improved process efficiencies (in time, operating costs, and/or capital costs)
- Improved product quality, yield and/or raw material savings
- Elimination or reduction of process downtime from maintenance requirements
- More effective and efficient mixing and increase transfer rate
- Low power mixing for most all applications

For more information please visit us
http://www.hydrodynamics.com